

## B.P.Ed. (Even Semester- II)

### EDUCATIONAL TECHNOLOGY AND METHODS OF TEACHING IN PHYSICAL EDUCATION

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#### Unit- III

### *Principles of Exercise Program*

*“Exercise is a set of repeated pattern of physical movements, aiming for a specific purpose or special goal.”*

*Dr. Abhishek Kumar Singh*

Physical Fitness is “That the individual should possess appropriate anatomical, physiological, psychological capabilities that permit the organism to function adequately under the stress of lengthy periods of strenuous activity”

In other words, physical fitness means the possession of certain body functions that enable a person to face various stress situations. It has been define as the successful adaptation to the stresses of one’s life style.

#### ***Means of Fitness development – aerobic and anaerobic exercises***

For developing physical fitness, several methods have been designed. Since physical fitness is a relative term and is associated with the work to be done, special methods have to be adopted by athletes and coaches for improving

performances. However, general fitness can be developed by non-specific methods such as aerobics, callisthenics, jogging and cycling etc.

In fact, fitness developed through such methods, through slow, is more lasting than fitness developed through quicker methods which use weight and machines etc. the principle of reversibility shows that quicker achievements in fitness shows as early decline as compared to slowly achieved progress. Therefore, there is great importance of fitness programmes employing simple means. Basically there are two ways of exercises for developing Motor fitness –

- Anaerobic Exercises
- Aerobic Exercises

### **Anaerobic Exercises**

Anaerobic exercise is any activity that breaks down glucose for energy without using oxygen. Generally, these activities are of short length with high intensity. The idea is that a lot of energy is released within a small period of time, and your oxygen demand surpasses the oxygen supply.

Some simple means of Anaerobic fitness development includes **high-intensity interval training (HIIT) with short duration of time.**

- Weightlifting
- Jumping or jumping rope

- Sprinting
- Cycling
- Plyometric exercises
- Callisthenics

## **Aerobic Exercises**

Aerobic exercise also known as- **cardio** is physical exercise of low to high intensity that depends primarily on the aerobic energy-generating process. "Aerobic" means "relating to, involving, or requiring free oxygen", and refers to the use of oxygen to adequately meet energy demands during exercise via aerobic metabolism. Generally, light-to-moderate intensity activities that are sufficiently supported by aerobic metabolism can be performed for extended periods of time. Generally aerobic exercise might be better termed "solely aerobic", because it is designed to be low-intensity enough so that all carbohydrates are aerobically turned into energy.

Some simple means of aerobic fitness development includes **low-intensity continuous training (LICT) with long duration of time.**

- Aerobics/Rhythmics
- Jogging
- Cycling
- Participation in games & sports

- Circuit training
- Swimming
- Brisk Walking
- Running

***Exercises and Heart rate Zones for various anaerobic and aerobic exercises intensities***

Heart rate zones can be defined as percentages of maximum heart rate of an individual. For various anaerobic and aerobic exercises this heart rate zone can be easily understand by the given table under-

<b>Exercise Zones</b>											
<b>Percent Beats Per Minute</b>	<b>Exercise Intensity</b>	<b>Age</b>									
		<b>20 year</b>	<b>25 year</b>	<b>30 year</b>	<b>35 year</b>	<b>40 year</b>	<b>45 year</b>	<b>50 year</b>	<b>55 year</b>	<b>65 year</b>	<b>70 year</b>
<b>90% to 80%</b>	<b>Anaerobic Or Hardcore training</b>	<b>160</b>	<b>156</b>	<b>152</b>	<b>148</b>	<b>144</b>	<b>140</b>	<b>136</b>	<b>132</b>	<b>124</b>	<b>126</b>
<b>80% to 70%</b>	<b>Aerobic Or Cardio / Endurance training</b>	<b>140</b>	<b>137</b>	<b>133</b>	<b>130</b>	<b>126</b>	<b>123</b>	<b>119</b>	<b>116</b>	<b>109</b>	<b>105</b>

